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Measures on projections in a W*-algebra of type I2

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Abstract

In the paper we present two results for measures on projections in a W *-algebra of type I2. First, it is shown that, for any such measure m, there exists a Hilbert-valued orthogonal vector measure μ such that {norm of matrix}μ(p){norm of matrix}2 = m(p) for every projection p. In view of J. Hamhalter's result (Proc. Amer. Math. Soc., 110 (1990), 803-806), this means that the above assertion is valid for an arbitrary W*-algebra. Secondly, a construction of a product measure on projections in a W*-algebra of type I2 (an analogue of the product measure in classical Lebesgue theory) is proposed. © 2013 Springer Science+Business Media New York.

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Keywords

measure on projections, orthogonal vector measure, product measure, W*-algebra